**IT Applications Unit 3, AOS 1, Online Communities**

Complete the following, from pgs, 14-18: **Network communication standards**

**Networks are classified according to below and we will study the following:**

1. **Network Categories: LAN, WAN**
2. **Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet**
3. **Network communication standards**
4. **Network hardware and software**
5. **Transmission media**
6. **Network security**

**Network communication standards**

1. Why are network standards required?

Network standards are required so multiple devices on a network can be compatible with each other.

1. What is a protocol?

A protocol is a rule or standard that defines how to computers or devices on a network transmit data.

1. What is the OSI?

The OSI, Open System Interconnection is a standard for a network communications system that defines a model for using protocols in seven layers.

**Ethernet**

1. Describe the nature of Ethernet.

Ethernet is a communication standard that describes communication over a single cable shared by all devices on a network. A device connected to the cable is able to communicate to any other attached device.

1. What are frames?

Frames are short messages that contain packets of information, these frames are how the Ethernet communicates between nodes.

1. Identify the 4 components of all Ethernet frames.

All frames contain:

* The destination node address
* The sending node address
* Data
* Parity information

1. Fig. 1-9 on p 17 lists the Ethernet type, cable type, maximum length and transfer rate for Ethernet transmissions. The College typically uses 100BaseTX, Cat 5 or10Gbase-T. What are their respective maximum lengths and transfer rates?

100BaseTX has a maximum length of 85 meters and a transfer rate of 100Mbps, Cat 5 has a maximum length of 85 meters and has a transfer rate that ranges from 10Mbps to 100Mbps, and 10Gbase-T has a maximum length of 85 meters and a transfer rate of 10Gbps.

**TCP/IP**

1. Describe the nature of TCP/IP.

The TCP/IP, Transmission Control Protocol/ Internet Protocol, is a protocol for packaging data for network transmission, it specifies the rules used to create the packages

1. TCP/IP uses smaller packets than other protocols. Why is this an advantage on the internet?

This is an advantage to the internet because the smaller packages give more options to the network management to enable load balancing.

* 1. **ireless standard**

1. What does this standard do?

This standard defines how to devices can communicate using radio waves.

1. What is a Wi-Fi network?

A Wi-Fi, wireless fidelity, is a network that allows computers within 50 meters of each other to be connected wirelessly.

1. Different wireless standards transmit at different frequencies. What is the advantage of the newer 802.11n standard?

The advantage of the new 802.11n standard is that it operates at 5GHz 2.4GHz and can support a larger range than previous standards.

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